

WHAT IS CLAIMED IS:

1. A rotor structure for a permanent-magnet motor, comprising:  
an annular laminated stack of electromagnetic steel sheets incorporating therein permanent magnets;

5 a pair of annular end plates between which the annular laminated stack is sandwiched;

a cylindrical core buck having its outer circumferential periphery carrying thereon the annular laminated stack and the annular end plates; and

10 a rotor shaft integrally connected to the cylindrical core buck to be rotatable therewith;

wherein each outer end surface of the annular laminated stack has a plurality of first contoured fixing portions, and an inner surface of each of the annular end plates has a plurality of second contoured fixing portions; and

5 wherein the annular laminated stack and the annular end plates are fixedly coupled to one another by caulking at the first and second fixing portions.

2. The rotor structure according to claim 1, wherein the annular laminated stack and the annular end plates are held on the cylindrical core buck and fixed thereto by a C-ring fitted thereto.

3. The rotor structure according to claim 1, wherein the annular end plates and the annular laminated stack are fixed to the cylindrical core buck by caulking.

4. The rotor structure according to claim 1, wherein each of the annular end plates is made of non-magnetic material.

25 5. The rotor structure according to claim 1, wherein each of the annular end plates is made of stainless steel.

6. The rotor structure according to claim 1, wherein the first fixing portions of the annular laminated stack are located in a circumferential area distanced from an inner circumferential periphery of each electromagnetic steel sheet by 7 to 30 % a radial length of each electromagnetic steel sheet relative to an outer circumferential periphery thereof and at circumferentially, equally spaced positions.

30 7. The rotor structure according to claim 6, wherein each of the first fixing portions of the annular laminated stack is formed in a rectangular shape which has a first dimensional element of more than 1 mm and a second dimensional

element of more than 2 mm, with a third dimensional element of a value equal to one to two times the thickness of each electromagnetic steel plate.

8. The rotor structure according to claim 1, wherein each of the second contoured fixing portions of the annular end plate has substantially the same dimensional size as that of each of the first contoured fixing portion of the annular laminated stack.

9. The rotor structure according to claim 1, wherein each of the annular end plates has an excessive marginal portion for enabling a rotating balance of the rotor.

10. A rotor structure for a magnet motor, comprising:

an annular laminated stack of electromagnetic steel plates incorporating therein permanent magnets;

annular means holding the annular laminated stack at both sides thereof in a fixed place;

cylindrical means carrying thereon the annular laminated stack and the annular means; and

a rotor shaft integrally connected to the cylindrical means to be rotatable therewith;

wherein each outer end surface of the annular laminated stack has a plurality of first contoured fixing portions, and the annular means has a plurality of second contoured fixing portions; and

wherein the annular laminated stack and the annular means are fixedly coupled to one another by caulking at the first and second fixing portions.